CLAIMS

What is claimed is:

1. A method of identifying a peroxisome proliferator activated receptor (PPAR) modulator comprising the steps of:

(a) determining a first level mRNA transcript of a PPAR responsive gene formed in a cell endogenously expressing one or more PPARs;

(b) contacting the cell endogenously expressing the one or more PPARs with a test compound known or suspected to bind to the one or more PPARs;

(c) measuring a second level of mRNA transcript of the PPAR responsive gene formed in the cell; and

(d) comparing the first level of mRNA transcript with the second level of mRNA transcript,

wherein, a difference in the first and second levels of mRNA transcript indicates the test compound is a PPAR modulator.

2. The method of claim 1, wherein the one or more PPARs is selected from the group consisting of PPAR-α, PPAR-$\beta(\delta)$, and PPAR-γ.

3. The method of claim 1, wherein the cell is a mammalian cell.

4. The method of claim 3, wherein the mammalian cell is a human proximal tubule derived cell (HK-2).

5. The method of claim 1, wherein the PPAR responsive gene is selected from the group consisting of pyruvate dehydrogenase kinase-4 (PDK-4) and adipocyte differentiation relating protein (ADRP).

6. A method of identifying a peroxisome proliferator activated receptor (PPAR) modulator comprising the steps of:

(a) determining a first level of expression of a protein encoded by a PPAR responsive gene in a cell endogenously expressing one or more PPARs;

(b) contacting the cell endogenously expressing the one or more PPARs with a test compound known or suspected to bind to the one or more PPARs;

(c) measuring a second level of expression of the protein encoded by the PPAR responsive gene; and

(e) comparing the second level of expression of the protein encoded by the PPAR responsive gene with the first level of protein encoded by the PPAR responsive gene,

wherein, a difference in the first and second levels of expression of the protein encoded by the PPAR responsive gene indicates the test compound is a PPAR modulator.

7. The method of claim 6, wherein the one or more PPARs is selected from the group consisting of PPAR-α, PPAR-β(δ), and PPAR-γ.

8. The method of claim 6, wherein the cell is a mammalian cell.

9. The method of claim 8, wherein the mammalian cell is a human proximal tubule derived cell (HK-2).

10. The method of claim 8, wherein the PPAR responsive gene is selected from the group consisting of pyruvate dehydrogenase kinase-4 (PDK-4) and adipocyte differentiation relating protein (ADRP).

11. A method of identifying a peroxisome proliferator activated receptor (PPAR) modulator comprising the steps of:

(a) determining a baseline level of functional activity of a protein encoded by a PPAR responsive gene in a cell endogenously expressing one or more PPARs;

(b) contacting the cell endogenously expressing the one or more PPARs with a test compound known or suspected to bind to the one or more PPARs;

(c) measuring a post-contact level of functional activity of the protein encoded by the PPAR responsive gene; and

(f) comparing the post-contact level of functional activity of the protein encoded by the PPAR responsive gene with the baseline level of functional activity of the protein encoded by the PPAR responsive gene,

wherein, a difference in the first and second levels of functional activity of the protein encoded by the PPAR responsive gene indicates the test compound is a PPAR modulator.

12. The method of claim 11, wherein the one or more PPARs is selected from the group consisting of PPAR-α, PPAR-β(δ), and PPAR-γ.

13. The method of claim 11, wherein the cell is a mammalian cell.

14. The method of claim 13, wherein the mammalian cell is a human proximal tubule derived cell (HK-2).

15. The method of claim 11, wherein the PPAR responsive gene is selected from the group consisting of pyruvate dehydrogenase kinase-4 (PDK-4) and adipocyte differentiation relating protein (ADRP).

16. The method of claim 11, wherein the functional activity is selected from the group consisting of an increase or decrease in kinase activity, an increase or decrase in insulin sensitization, and one or more changes in adipocyte differentiation.